Journal of Education and Practice
ISSN 2222-1735 (Paper) ISSN 2222-288X (Online)
Vol.5, No.23, 2014
www.iiste.org

Identification of Requirements for Implementing Quality Management System (ISO 9001:2008) to the Sugathadasa National Sports Complex Indoor Stadium, Sri Lanka

Luxman, J., Dissanyake, R.M.D.N.
Department of Sport Sciences and Physical Education, Sabaragamuwa University of Sri Lanka, Sri Lanka
Email of the corresponding author: luxamu84@gmail.com

Abstract
Quality Management Systems (QMS) can provide numerous benefits to sports organizations. However, well-established sports service quality improvement systems are not common in Sri Lanka at present. This study focused on setting up all necessary requirements for the implementation of ISO 9001:2008 QMS to the Sugathadasa National Sports Complex indoor stadium (SNSCI), thereby improving the standards of services provided by SNSCI. The study was carried out in two phases and in Phase I, the basic requirements for the implementation of ISO 9001:2008 QMS to SNSCI were determined using the pre-assessment questionnaire developed by Sri Lanka Standards Institute. Individual interviews were conducted at different organizational levels to gather information required to lay the basic frame work and to identify employees' perception on implementation of ISO 9001:2008 QMS. Second phase involved development of all elements of the ISO 9001:2008 QMS. After developing the systems, a post-gap analysis was carried out using the same questionnaire that was used for pre-gap assessment. Pre-gap assessment revealed that SNSCI do not fulfill many requirements in the areas of Documentation, Management Responsibility, Resource Management, Product Realization, and Measurement, Analysis, as the organization did not have any QMS implemented at this stage. These requirements were taken into consideration when developing the system documents. In Phase II of the study, necessary frame work was laid out and all the documents were compiled according to ISO standards. Post-gap analysis revealed that the developed QMS complies with all requirements of the ISO 9001:2008 certifications. Although requirements for the implementation of ISO 9001:2008 were successfully met in this study, it is equally important to evaluate the system following implementation to ensure its effectiveness, which usually takes at least a year.
Keywords: Sport service quality, Quality Policy, Quality Manual

1. Introduction

In order to compete with the global market, sports service organizations are becoming extremely competitive and the service quality is one of the most important factors to be considered at the strategic decision making process. Sports services link with many different types of activities,it may stretch across multiple borders.Service quality is needed for creating customer satisfaction as it is connected to customer perceptions and customer expectations. Service quality can be described as the customer comparisons between their expectations about the service they will use and their perceptions about the service organization. That means that if the perceptions would be higher than the expectations the service will be considered excellent; if the expectations equal the perceptions the service is considered good; and if the expectations are not met the service will be considered bad.The needs and wants of sport customers are constantly changing and unpredictable, making quality services in sport more elusive than most realize.

Many researchers reveal the importance of the Sports Service Quality. Moreover, several sport service providers have emphasized the importance of quality services and their efficient operation in order for their organizations to remain profitable (Papadimitriou &Karteroliotis, 2000). As service quality received considerable attention, sport participants and spectators raised their expectations for more benefits (Howat et al., 1996; Mawson, 1993).According to Robinson (2007), underpinning both quality improvement and customer satisfaction is the concept of customer expectations. Knowledge of what the customers expect from sport organizations allows service attributes of importance to be identified. There are several major factors that influence customer expectations including word of mouth communications from other customers, personal needs of customers, past experiences, and external communications from service providers (Howat et al., 1996).

1.1. Background of the Study

The researcher selected Sugathadasa National Sports Complex Authority as the training place. During this research period through the literature and the researcher's own experience related to service quality it converted to the sports service improvement project implantation for Sugathadasa National Sports Complex indoor stadium (SNSCI).

Sugathadasa National Sports Complex Authority owns a number of stadia with facilities on par with international standards. It is the pioneer in facilitating sports venue with international standards to the country

since the 1960.

The authority had been functioning as a trust fund under the Ministry of Sports, Youth Affairs and Samurdhi since 1995.The Act for the conversion of Sugathadasa National Sports Complex into an Authority was tabled in Parliament on 20th April, 1999. The Act was passed with effect from 1999.09.01 and the Sugathadasa National Sports Complex Authority was established accordingly.Sugathadasa Indoor Stadium consists of the following four components

- Indoor Stadium
- Swimming pool
- Gymnasium
- Sports hotel

This research project focused on improving sports service quality in Sri Lanka, which was carried out in Sri Lanka for the first time. At present, well-established sports service quality improvement processes/systems are not that common in Sri Lanka. This study identifies the basic requirements for implementing ISO 9001:2008 quality management system (QMS) at the SNSCI. By implementing ISO 9001:2008 QMS, the Sugathadasa Sports Complex can benefit in so many ways.

ISO 9001 is a generic quality management system that codifies quality standards in all areas of an organization's functioning. Many governments around the world have made QMS a mandatory requirement. Besides the trend in developed countries, some developing countries including Malaysia and Kenya have also made it a mandatory requirement in their government organizations. Some international sports-affiliated organizations that have implemented QMSs are listed below.

- International Anti-Doping Arrangement (IADA): Certified with ISO 9001:2008
- World Anti-Doping Agency (WADA): Collaboration with ISO ISO/IEC Guide 62:1996 (EN 45012) ISO 9001:2001
- The Football Association of Wales: Certified with ISO 9001:2000 (ISO 9000).
- South Florida Sport Court: Certified with ISO 9001:2008

Furthermore, several local organizations have implemented ISO 9001 QMS with the aim of improving the productivity of their organizations. These organizations include Sri Lanka Telecom, Trade and Services Department of People's Bank, Sri Lanka Insurance Corporation, National Development Bank, and Industrial Technology Institute.

Background studies (literature surveys, interviews with resource persons etc.) reveal that ISO 9001:2008 QMS can provides a promising means to improve the service quality and consequently, customer satisfaction on services provided by the Sugathadasa Sports Complex. Thus, this study can be of great significance as it helps to improve the quality of the services provided by the Sugathadasa Sports Complex, which plays a huge role in the Sri Lankan Sports Sector.

1.2. Objectives

1.2.1. Overall objective

Setting up of requirements for the implementation of ISO 9001:2008 QMS to the SNSCI

1.2.2. Specific objectives

1. To define the scope by identifying all activities that are to be covered in a QMS and to identify the relationship between them
2. To compile the QM policy and a set of related objectives associated with the organization and processes
3. To prepare documentation including the manual and mandatory procedures for the implementation of QMS (ISO 9001:2008) to SNSCI
4. To identify the blue print of QMS (ISO 9001:2008) necessary for the successful implementation of the QMS for any sports organization

1.3. Significance of the study; Rational

QMSs are argued to bring great benefits to organizations in terms of revenue growth(McTeer& Dale, 1996), increased customer satisfaction (Casadesús& De Castro, 2005), higher profit margins, greater return on assets, improved control of business processes and procedures (Dale et al., 2007; Beckford, 1998), higher quality of products and services, increased productivity and efficiency (Gutiérrez et al., 2010; Carlsson&Carlsson, 1994), and better teamwork and leadership (Van der Wiele et al., 2005, Thuseethan&Kuhanesan, 2014). As pointed out by Dale et al. (2007), authors such as Atkin (1987), Brown (1993), Dale & Oakland (1994) and Munro-Favre et al. (1993) have suggested that an organization can improve its internal efficiency, ensure better use of time and resources, improve product and service consistency, eradicate the need for re-working and bring about cost savings by implementing a QMS. In essence, QMSs make processes and procedures more standardized, resulting in better co-ordination, transmission of information and consistency in the organization (Brunsson&Jacobsson, 2000, pp. 169-170; Dale et al., 2007). When employees and managers work towards the same goals and objectives, the organization can run smoother with less uncertainty and better visualized activities (Brunsson&Jacobsson, 2000; Shriharan&Samarasinghe, 2014).

1.4. Limitations of the research project

A. Directors and staff members do not have an adequate understanding of the ISO 9000 certification process or the quality standards

Some members of the SNSCI have been known to direct their organization's resources toward ISO QMS registration, only to find that their incomplete understanding of the process and its requirements results in wasted time and effort.

B. Heavy emphasis on documentation

The QMS process relies heavily on documentation of internal operating procedures in many areas which are time-consuming. Therefore it is difficult to compile an effective output considering the allocated time for this research project.

C. Time constrains

Normally, planning and implementation of a QMS may be carried out in several phases: Determination of the scope of QMS, Development of Procedures, Training, Pilot implementation of procedures, Evaluation of Quality Management System. In this research study, only the first two phases were carried out due to time limitations.Although a QMS can be developed in 4–6 months, it usually takes at least three years to establish a comprehensive QMS that meets all expectations. Thus, it is equally important to evaluate components such as motivation of staff, employee involvement, long-term top management commitment, and effectiveness of training continuously after the implementation of QMS to ensure its progress.

2. Literature Review

2.1. Theoretical framework

The aim of the research design is to meet the research aim and objectives outlined in Sections1.2. According to Yin (2003), "a research design guides the investigator in the process of collecting, analyzing and interpreting observation". Also, Yin (2003) states five different types of research design. They are experiment, survey, archival,

History and case study.This theoretical frame work is provided a well-supported rationale to conduct the study. According to the research the theoretical framework is constructed by the researchers own concept. The research is focused on identification of requirements for implementing ISO 9001:2008 QMS to the SNSCIS. Thus, this research study can be considered as a sports service quality improvement research project which was conducted according to the ISO standards.The study involves conducting the pre assessment to find gaps between existing states and required states using pre-assessment questionnaire published by Sri Lanka Standards Institution and then planning to develop standards to Sugathadasa National Sports Complex according to the ISO 9001:2008 QMS.

2.2. Literature review

2.2.1. Quality

International standards organization has described the term "Quality" as follows; The totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs (ISO 8402)Ability of a set of inherent characteristics of a product, system or process to fulfill requirements of customers and other interested parties (ISO 9000/2000)The quality requirements involve availability, delivery, reliability, maintainability, and cost effectiveness (Oakland, 2000).The perception of quality has shifted over the past 30years. Quality was previously measured by attaining some allowable level of defects. It is now defined as meeting customer requirements and go beyond to its expectations (Withers and Ebrahimpour, 2001). There are several quality definitions from well-known quality experts. Juran and Gryna (1988, p.2.8) define quality as "Fitness for purpose or use". Deming (1986, p.5) defines quality, as "Quality should be aimed at the needs of the consumer, present and future". Feigenbaum (1991, p.7) defines quality as "The total composite product and service characteristics of marketing, engineering, and manufacture and maintenance through which the product and service in use will meet the expectation by the customer". Crosby (1996, p.24) defines quality as "Conformance to requirements and it is conforming to specifications".

With the increased globalization of markets and liberalization of local economies, quality has become the major factor in achieving competitiveness, and it is necessary for businesses all over the world to develop competitive strategies (Madu, 1997). Also, Madu, (1997) quoted Hames who further notes that quality, is a series of behaviors — ways of thinking and of working — and can only thrive in a compatible environment. Furthermore, Liang Tan (1997, p.152) defines quality as "A long- term business strategy, which strives to provide goods and services to fully satisfy both internal and external customers by meeting their explicit implicit expectations". Nowadays, with the emerging market given competitive environment, industries should achieve internationally accepted quality levels, to ensure a place in this market. Global competition calls for higher levels of quality, efficiency and service (Motwani et al., 1996).The customer is defining the new quality, which is a part of an organization's culture. At the same time, it must start with the chief executive officer and be part of a top management team's performance practices (Ludwig-Becker, 1999). ISO 9000 (2000, p.'7) defines quality as

"The degree to which a set of inherent characteristics fulfils requirements". By combining the definitions of quality and requirements in ISO 9000/2000, quality can be expressed as "The degree to which a set of inherent characteristics fulfils a need or expectation that is stated, generally implied or obligatory" (Hoyle, 2001, p.21). Quality is a fundamental strategy for the support and improvement of competitiveness in different sectors. Recently it was linked with customer's satisfaction and went beyond that to expectations and continual improvement.

2.2.2. Service quality

Quality management system (ISO 9001:2008) gives considerable attention on the service quality

A common definition of "service quality" views quality in terms of the consumer's impression of an entity's overall excellence or superiority (Zeithaml, 1987).

2.2.3. 2.2.3 Sports Service quality

Sport service providers emphasize quality services and efficient operation in order to remain profitable (Papadimitriou &Karteroliotis, 2000).As service quality received considerable attention, sport participants and spectators raised their expectations for more benefits (Howat et al., 1996; Mawson,1993).In this environment, according to Papadimitriou and Karteroliotis (2000), phrases like "define your customer", "explore customer expectations" and "meet the customer's needs" have attained a predominant role within management philosophy. Organizational success is inherently linked with the ability of the sport service provider to identify and respond to needs, but also to influence what is perceived as quality service by the targeted segment of the market. For this reason, sport managers are searching for tools to effectively measure service quality (Tsitskari, Tsiotras&Tsiotras, 2006). Researchers from the field of sport and leisure management and marketing have started to conceptualize and measure the service quality and construct and presented studies that model service quality in various sport settings.

Theodorakis and Kambitsis (1998) proposed the SPORTSERV which consisted of five dimensions of quality perceived by the sport spectators i.e. access, reliability, responsiveness, tangibles and security. Kelley and Turley (1999) investigated the importance of service attributes used by sport fans when evaluating the quality of service and level of satisfaction they experience at sport events. The findings from this study suggest there are nine quality factors in the sport event context and some of them are unique to sport events service evaluation.EfiTsitskari et al, examined spectators' expectations of the service quality provided in the basketball stadiums where the professional teams of Northern Greece play.. - Repeated. The spectators' age was also examined as a factor of their expectations' differentiation (EfiTsitskari et al, 2009). – Mention the result/outcome of the study.

2.2.4. Quality Management System

A quality management system (QMS) can be defined as "a set of interrelated or interacting elements to establish policy and objectives and to achieve those objectives to direct and control an organization with regard to quality" (Wilkinson & Dale, 2002, p. 289).When quality management systems first arrived it was intended for production and manufacturing industries but has over time developed further, and is today suitable forother industries such as the service industry (Feigenbaum, 1983, p. 7). At present, QMSs emphasize more abouton creating quality thinking within the whole organization and across business channels rather than just eliminating defects or unsatisfactory quality levels in products (Gutiérrez et al, 2010, p. 592). Hence it can be said that QMSs are no longer specific to any industry or sector but can be applied to all organizations including service providers.

2.2.5. Quality Management System Development

The quality management system developed by the International Organization for Standardization is highly related to early military systems (Hallström, 2000). ISO 9000 can be traced back to the military standards developed by the US Military, the NATO, and the British military in the 1930's (Hallström, 2000). As a result of the quality developments in military sectors, many countries began forming national standards for specific branches and industries (Hallström, 2000). Quality management systems grew significantly in the defense industry, space technology, and manufacturing processes and in the 1970's other industries began implementing quality management systems (Hallström, 2000). In 1977 an international proposal was presented by the national standardization institute of Germany (DIN) to form an international committee responsible for quality standardization and certification (Hallström, 2000). Discussions between the standardization institutes of Germany, France, Canada, and Great Britain led to the forming of ISO - TC 176. The committee was formed with the purpose of "Standardization and harmonization in the field 29 of generic quality systems and quality assurance, and appropriate related quality technologies" (Hallström, 2000, p. 69). The first ISO 9000 series was presented in 1987, which described the idea of standardizing production processes of an organization in an efficient and thought-through way (Hallström, 2000). It promoted the benefits of having a structured system of documented work routines to measure the quality of products and the processes of manufacturing (Hallström 2000). The International Organization for Standardization (ISO) defines a 'quality management system' as "a management system to direct and control an organization with regard to quality" (BS EN ISO 9000, 2000, in Dale et al., 2007, p. 280). Today, the ISO 9000 series consists of a set of standards and represents an

international consensus of what good quality management practices is (www.iso.org). The ISO 9000 series has four major standards: ISO 9000, ISO 9001, ISO 9004, and ISO 19011 (Dale et al., 2007). The four standards each concern a specific part of quality management systems (Dale et al., 2007, p. 288):

- ISO 9000: Quality Management Systems: Fundamentals and Vocabulary
- ISO 9001: Quality Management Systems: Requirements
- ISO 9004: Quality Management Systems: Guidelines for Performance Improvement
- ISO 19011: Guidelines on Quality and Environmental Auditing

The standards have two separate functions where the first function is to identify the elements to be covered by an organization's quality system and provide guidance on quality management and the application of it (Dale et al., 2007, p. 288). The second function is the explanation of features and characteristics of a quality management system that are key for assuring quality (Dale et al., 2007, p. 288).The aim of having a quality management system is to create a framework of reference points which ensures that each process within an organization is performed using the same information, methods, skills, and controls, and applied in a consistent way (Dale et al., 2007; Hallström, 2000). A quality system should assist in defining requirements, communicating policies and procedures, supervising the work performed and improving overall teamwork (Dale et al., 2007). It is important that documents that describe the QMS and its activities are established, assured, and continuously improved (Dale et al., 2007). The fundamental documents behind QMSs are:

- A company quality manual describing the quality policies and quality objectives in line with company policies and objectives
- A procedures manual describing the functions of the system and outlines the structure, responsibilities and practices for each department or business unit
- Other documents containing work instructions, specifications, and methods of how to perform work activities (Dale et al., 2007)

Apart from having documents supporting the quality system, organizations usually include a database containing other forms, standards, and reference-information relevant to its quality system (Dale et al., 2007).

2.2.6. Quality management-ISO 9001:2008 principles

Eight principles have emerged as a fundamental of QMS. These principles are as They are a set of enablers that top management can use as a framework for introducing good management practice to underpin the organization's management systems. An organization should take into consideration the concepts and the philosophies behind the principles when introducing or updating its management systems (Hele, 2003). QMS-ISO 9000 version 2000 standards are based on a set of QM principles that have a good deal with the principles that characterizes QMS. The ISO 9001:2000 standard tends to increase the intersection area between QMS requirements and TQM (Biazzo and Bernardi, 2003). ISO/TC 176 (1998) mentioned that QM principles are comprehensive and fundamental rules or beliefs, for leading and operating an organization, aimed at continually improving performance over the long term by focusing on customers while addressing the needs of all other interested parties. Ludwig-Becker (1999) mentioned that the principles provide a clear relationship of an organization's QM to its management system and place QM in a business management framework. The principles of QM should be embedded into the organizational culture to enhance a climate of open cooperation and teamwork through the staff, customer and supplier (Laszio, 2000). The training in QM principles is very important for the people in the organization. Quality can become a problem when people in the organization do not understand the QM principles (Crosby, 1996). The principles of QMS are describes below.

2.2.6.1. Customer focus

The organizations depend on their customers. They should understand and make a hard effort to meet and exceed their expectations (Ushantha, Wijeratne, and Achchuthan, 2014).. This principle means that everyone in the organization must focus on the customer not only the top management or the sales department. Considering this fact, many organizations are establishing their policies and procedures around the customer (Ludwig-Becker, 1999). In ISO 9001:2000 standard, the customer focus principle is reflected through the requirements addressing the communication with theCustomer, management commitment, appointment of a management representative and the determination of customer needs and expectations (Hoyle, 2001). VouzasandGotzamani (2004) quoted Conti (1999b) who identifies that customer satisfaction is requirement for verifying the effectiveness of the QS. Customer satisfaction can be achieved by developing and implementing an effective QMS.

2.2.6.2. Leadership

Goetsch and Davis (2000) indicated that leadership relating to quality is the ability to inspire people to make a total willing and voluntary commitment to accomplishing orexceeding organizational goals. Leadership for quality is based on the philosophy that continually improving work methods and processes improve quality, costs and productivity. Leaders should establish the unity and purpose for the internal environment of the organizations. Leaders should make the employees in an organization want to work. Leadership is to guide all activities of the organization towards quality excellence. Top management should create and sustain clear and visible quality values along with a management system (Raghunathan et al., 1997).Ludwig-Baker (1999)

highlighted that the hallmarks of good leaders are; communications, vision, change and respect for all individuals. The leadership must create and maintain the internal environment in the organizations to make people fully involved in achieving the organization's objectives. Top management needs to be involved in the management review process to understand what goes on within the organization and current and future needs of its customers.Hoyle (2001) added that the ISO 9000 the leadership principle is reflected through the requirements addressing; internal communication, creating an effective work environment, planning and the setting of objectives and policies. Leadership in an organization is represented in the involvement of managers in setting the goals and objectives, the review and assessment activities of the whole situation toward their customers, employees, competitors, technology and quality. Also, it represents the continuous improvement activities (Al-Zamany et al., 2002).

2.2.6.3. Involvement of people

When the people at all levels are fully involved in the organization, this enables their abilities to be used for the organization's benefit. The people within an organization are communicated to know and understand the relevance and importance of their activities. Also, they should know how these contribute to organization's objectives. Hele (2003) cited that people at all levels are the essence of an organization and their full involvement enables their abilities to be used for the organization's benefits. ThePrinciple is reflected in ISO 9001:2000 through the requirements addressing; participation in design reviews, defining objectives, responsibilities and authority, creating an environment in which people are motivated, internal communication and identifying complete needs (Hoyle, 2001).

2.2.6.4. Process approach

Tsim et al. (2002, p.247) outlined that process approach management is defined as "The application of a system of processes within an organization, together with the identification and interactions of these processes and their management". The whole system should be seen as one homogenous system with no part being in isolation. When the activities and resources in the organizations are managed as a process, the desired result can be achieved more efficiently (Ludwig-Baker, 1999). Hoyle (2001) mentioned that the process approach to management is not converting inputs to outputs that meet requirements, but it is a managing process that has a clearly defined purpose and objectives based on the needs of interested parties. When a process is designed to get the object and purpose through tasks that use capable human, physical, financial resources and information, it produces outputs that satisfy all interested parties. But Balzarova et al. (2004) quoted Batnber et al. (2000) who cited that the presence of a hierarchal management approach in some companies made it difficult to establish process-based management. The process approach is the biggest change in ISO 9001:2000 where this approach helps organizations to eliminate complicated QMS documentation (ISO/TC 176 SC2, 2002).

2.2.6.5. Systems approach to management

Identifying, understanding and managing interrelated processes as a system contributes to the organization's effectiveness and efficiency in achieving its objectives (Ludwig-Baker, 1999) This principle recognizes that the behavior of any part of a system has some effect on the behavior of the system as a whole (Hoyle, 2001).

2.2.6.6. Continual improvement (CI)

ISO 9000 (2000, P.9) defines the CI as "A recurring activity to increase the ability to fulfill requirements". ISO/TC 176 SC2 (2002) stated that the ISO 9001:2000 standards a process of CI in order to achieve products of the highest quality and greater customer confidence. CI of the organization's overall performance should be a permanent objective of the organization. It is a permanent goal for any organization that wishes to stay in business. CI would yield excellence in design, ensure communication in contracts and create teamwork spirit (Hele, 2002). In similarity, Magd et al. (2003) cited that CI should be an objective as it is a necessary objective of QMS-ISO 9001:2000 implementation. It is based on the commitment of every person in the organization and on information related to quality.Deming (1986) argued that CI will result in increase in productivity, decrease in cycleTime, increase in capacity, reduction in production costs, improved profits, customer satisfaction, greater market share, reduction customer complaints and less litigation. Based on existing literature on ISO 9001: 2000 standards, Low and Ling Pan (2004) points out that without top management commitment and support, an organization cannot achieve CI process of a QMS.

2.2.6.7. Factual approach to decision making

Ludwig-Baker (1999) stated that the effective decisions and actions are based on the logical and intuitive analysis of data and information. Scrap, rework, returns and customer information are all-important for decision making. This principle leads the decision makers to approach the decision in different ways; decide what decision wants to be made, determine what facts are needed to make the decision and determine how many facts will be obtained and what methods should be used to get them (Hoyle, 2001). Effective decisions depend on the analysis of data collected. Using the factual data and information with experience can help in making the right decisions for the organization (Hele, 2003).

2.2.6.8. Mutually beneficial supplier relationships

The organization should let their suppliers know its requirements and current and future needs of its customer.

Mutually beneficial relationships between the organizations and their suppliers enhance the ability of the organizations to create value (Ludwig-Baker, 1999; Sivesan and Achchuthan, 2013). The twenty first century organizations are more dependent upon their suppliers rather than ever before (Hoyle, 2001).

2.2.7. Benefits of ISO 9001

The justification of adoption of the certification is based normally on its benefits and their effects on the organization's future. Benefits realized if the implementation of a QMS-ISO 9001 is defined and linked to the objectives of the organizations. Wiele A et al.(2001) and Thuseethan(2014) indicated that organizations pressured by external pressures to adopt the certification experienced fewer benefits than organizations did internally driven ones. A comparative empirical study done by Casadesus and Karapetrovic (2003) indicates that ISO 9001:2000 gives more significant benefits than the old version (ISO9001/2/3:1994) in improving supplier relationships, decreasing non conformities, customer satisfaction and team participation.

A. Customer satisfaction

Martinez-Costa and Martinez-Lorente (2003) cited one of the advantages of ISO9001:2000 standard is to satisfy customer requirements. The ISO 9000 certification makes a good relation between the organizations and their customers, increase customer satisfaction and increased on time delivery to customer {Poksinska et al. (2002), Quaziet al. (2002), Beskese and Cebeci (2001), Tang and Kam (1999), Koo et al. (1998),Askey and Malcolm (1997) and Brown and Wiele (1995)). This view was supported by Sauvage and Aptel (2004) who cited that the certification increases customer satisfaction. In addition, by Vouzas and Gotzamani (2004) mentioned that if any organization applies an effective QMS, it will provide confidence in customers that their products consistently conform to their specified requirements. Koo et al. (1998) quoted the claimed benefits of the certification by BSI is improving customer satisfaction, as proof of quality to buyer acceptance and it is a confidence tool to the customer. Tricker (1997) and Rothery (1993) stated that the certification leads to improvement of customer and supplier relationship.

B. Continuous improvement (CI)

One of the main benefits of the certification is CI; it is a first step for TQM (BeskeseandCebeci, 2001). The ISO 9000 certification offers significant performance improvement in all TQM areas (Vouzas and Gotzamani, 2004). Poksinska et al. (2002), Tang and Kam (1999) and Koo et al. (1998) stated that provision of a foundation for TQM is one of the certification's benefits. CI as a benefit from ISO 9000 certification was mentioned by many researchers in their studies as Motwani et al. (1996), ErdalandGhosh (1997), Askey and Malcolm (1997), Brown and Wiele (1995) and Rothery(1993).

C. Increase of the awareness of quality

Researchers like Brown and Wiele (1995), Erdal and Ghosh (1997) and Koo et al.(1998) quoted that Yung (1997), Adanur and Allen (1995) and Dale (1994) stated that increase of the awareness of quality in general is a benefit obtained by the organizations with the certification. Furthermore, Quazi and Padibjo (1997) stated that the ISO 9000 certification benefits increased awareness of preventive and corrective actions.

D. Improved corporate image

Improvement of an organization's quality image is a result of adopting the certification {Sauvage and Aptel (2004), Poksinska et al. (2002) and Koo et al. (1998)).

E. Improve the management

Beskese and Cebeci (2001), Poksinska et al. (2002), Koo et al. (1998) and Askey and
Malcolm (1997) outlined the improvements to be achieved after the certification such as an effective paper flow system, more clear understanding of processes, tasks and responsibilities, development of a corporate culture and an effective documentation system. Tang and Kam (1999) and Brown and Wiele (1995) stated that improvement of the management system is a benefit obtained by the organizations with the certification.

F. Improved productivity and efficiency

ISO 9000 certification leads to productivity improvement {Quazi et al. (2002), Motwanieta!. (1996), Dale (1994) andRothery (1993)}.

G. Improved profitability

Increasing profitability was found a benefit of the certification in the organizations
{Quazi eta!. (2002) and Koo eta!. (1998)}.

H. Reduce the cost of the services and products.

Quazi et al. (2002), Koo et al. (1998), Motwani et al. (1996), Tricker (1997), Tang and Kam (1999) and Askey and Malcolm (1997) mentioned that the benefits that could be gotten by the manufactures when they apply the QS in their organization is a reduction in manufacturing and production costs because of less wastage and fewer rejects.

I. Improve the internal communication in the organizations

Another benefit of ISO certification is the improvement in internal and External communication (Beskese and Cebeci, 2001, Koo et al. (1998), Rothery (1993) and Brown and Wiele (1995))

J. Motivation to employees

Koo et al. (1998) and Tricker (1997) outlined the benefits of the certification is greater involvement and motivation within a company's workforce. Tang and Kam (1999) and Rothery (1993) revealed that the benefits from the certification are improving of personal job satisfaction and morale.

K. Better working environment

Improvement of work environment in the organization is outlined by Casadesus and Gimenez (2000) and Koo et al. (1998) as the certification benefit.

L. Increased effectiveness

Tang and Kam (1999) stated that one of the benefits from the certification is increased effectiveness in the organization.

M. Marketing tool

Casadesus and Gimenez (2000) quoted the Lloyd's Register Quality Assurance (1994) who pointed out that benefits of the certification as increased probability to get new clients and helps to find a place in international markets. {Tang and Kam (1999), Koo
et al. (1998), Askey and Malcolm (1997), Erdal and Ghosh (1997) and Motwani et al.(1996)1 found that the certification benefits are improving organizational
Competitiveness in the market, increase export of products and win more contracts. The certification assures business relations with the European community, which are required when importing products from others (Motwani et al., 1996).

N. Reduction of customer assessment

Casadesus and Gimenez (2000) quoted the Lloyd's Register Quality Assurance (1994) who cited reduction in the number of audit procedures from the customers is a benefit of the certification. Moreover, Koo et al. (1998) cited the claimed benefit of the certification by BSI is reduction of customer assessment.

O. worldwide recognition and more competitor respect

Motwani et al. (1996) point out that, according to Dzus (1991), Sateesh (1992) and Sprow (1992) worldwide recognition is a benefit of the certification. More competitor respect is usually obtained by the organizations with the certification (Brown and Wiele, 1995).

2.2.8. Quality management systems — Requirements

A. Scope

❖ **General**

This International Standard specifies requirements for a quality management system where an organization

a) Needs to demonstrate its ability to consistently provide product that meets customer and applicable statutory and regulatory requirements, and
b) Aims to enhance customer satisfaction through the effective application of the system, including processes for continual improvement of the system and the assurance of conformity to customer and applicable Statutory and regulatory requirements.

❖ **Application**

All requirements of this International Standard are generic and are intended to be applicable to all organizations, regardless of type, size and product provided. Where any requirement(s) of this International Standard cannot be applied due to the nature of an organization and its product, this can be considered for exclusion. Where exclusions are made, claims of conformity to this International Standard are not acceptable unless these exclusions are limited to requirements within Clause 7, and such exclusions do not affect the organization's ability, or responsibility, to provide product that meets customer and applicable statutory and regulatory requirements.

B. Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies ISO 9000:2005, Quality management systems — Fundamentals and vocabulary.

C. Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 9000 apply. Throughout the text of this International Standard, wherever the term “product” occurs, it can also mean “Service”.

D. Quality management systems

❖ **General requirements**

The organization shall establish, document, implement and maintain a quality management system and continually improve its effectiveness in accordance with the requirements of this International Standard.
The organization shall;

- Determine the processes needed for the quality management system and their application throughout the organization (see 1.2),
- Determine the sequence and interaction of these processes,

- Determine criteria and methods needed to ensure that both the operation and control of these processes are effective,
- Ensure the availability of resources and information necessary to support the operation and monitoring of these processes,
- Monitor, measure where applicable, and analyze these processes, and
- Implement actions necessary to achieve planned results and continual improvement of these processes.

These processes shall be managed by the organization in accordance with the requirements of this International Standard. Where an organization chooses to outsource any process that affects product conformity to requirements, the organization shall ensure control over such processes. The type and extent of control to be applied to these outsourced processes shall be defined within the quality management system.

❖ **Documentation requirements**

○ **General**

The quality management system documentation shall include documented statements of a quality policy and quality objectives,

- A quality manual,
- Documented procedures and records required by this International Standard, and
- Documents, including records, determined by the organization to be necessary to ensure the effective planning, operation and control of its processes.

○ **Quality manual**

The organization shall establish and maintain a quality manual that includes

- The scope of the quality management system, including details of and justification for any exclusion (see 1.2),
- The documented procedures established for the quality management system, or reference to them, and
- A description of the interaction between the processes of the quality management system.

○ **Control of documents**

Documents required by the quality management system shall be controlled. Records are a special type of document and shall be controlled according to the requirements given in next point. A documented procedure shall be established to define the controls needed

- To approve documents for adequacy prior to issue,
- To review and update as necessary and re-approve documents,
- To ensure that changes and the current revision status of documents are identified,
- To ensure that relevant versions of applicable documents are available at points of use,
- To ensure that documents remain legible and readily identifiable,
- To ensure that documents of external origin determined by the organization to be necessary for the planning and operation of the quality management system are identified and their distribution controlled, and
- To prevent the unintended use of obsolete documents, and to apply suitable identification to them if they are retained for any purpose.

○ **Control of records**

Records established to provide evidence of conformity to requirements and of the effective operation of the quality management system shall be controlled. The organization shall establish a documented procedure to define the controls needed for the identification, storage, protection, retrieval, retention and disposition of records. Records shall remain legible, readily identifiable and retrievable.

E. Management responsibilities

❖ **Management commitment**

Top management shall provide evidence of its commitment to the development and implementation of the quality management system and continually improving its effectiveness by

Communicating to the organization the importance of meeting customer as well as statutory and regulatory requirements,

- Establishing the quality policy,
- Ensuring that quality objectives are established,
- Conducting management reviews, and
- Ensuring the availability of resources

❖ **Customer focus**

Top management shall ensure that customer requirements are determined and are met with the aim of enhancing customer satisfaction.

❖ **Quality policy**

Top management shall ensure that the quality policy

- Is appropriate to the purpose of the organization,
- Includes a commitment to comply with requirements and continually improve the effectiveness of the quality management system,
- Provides a framework for establishing and reviewing quality objectives,
- Is communicated and understood within the organization, and
- Is reviewed for continuing suitability.

❖ **Planning**

○ **Quality objectives**

Top management shall ensure that quality objectives, including those needed to meet requirements for product [see 7.1 a)], are established at relevant functions and levels within the organization. The quality objectives shall be measurable and consistent with the quality policy.

○ **Quality management system planning**

Top management shall ensure that

a) The planning of the quality management system is carried out in order to meet the requirements given in 4.1, as well as the quality objectives, and
b) The integrity of the quality management system is maintained when changes to the quality management system are planned and implemented.

❖ **Responsibility, authority and communication**

○ **Responsibility and authority**

Top management shall ensure that responsibilities and authorities are defined and communicated within the Organization.

○ **Management representative**

Top management shall appoint a member of the organization's management who, irrespective of other responsibilities, shall have responsibility and authority that includes

a) Ensuring that processes needed for the quality management system are established, implemented and maintained,
b) Reporting to top management on the performance of the quality management system and any need for improvement, and
c) Ensuring the promotion of awareness of customer requirements throughout the organization

○ **Internal communication**

Top management shall ensure that appropriate communication processes are established within the organization and that communication takes place regarding the effectiveness of the quality management system.

❖ **Management review**

○ **General**

Top management shall review the organization's quality management system, at planned intervals, to ensure its continuing suitability, adequacy and effectiveness. This review shall include assessing opportunities for improvement and the need for changes to the quality management system, including the quality policy and quality objectives. Records from management reviews shall be maintained.

○ **Review input**

The input to management review shall include information on

Results of audits,

a) Customer feedback,
b) Process performance and product conformity,
c) Status of preventive and corrective actions,
d) Follow-up actions from previous management reviews,
e) Changes that could affect the quality management system, and
f) Recommendations for improvement

○ **Review output**

The output from the management review shall include any decisions and actions related to

a) Improvement of the effectiveness of the quality management system and its processes,
b) Improvement of product related to customer requirements, and
c) Resource needs

F. Resource Management

❖ **Provision of resources**

The organization shall determine and provide the resources needed

a) To implement and maintain the quality management system and continually improve its effectiveness, and

b) To enhance customer satisfaction by meeting customer requirements

❖ **Human resources**

○ **General**

Personnel performing work affecting conformity to product requirements shall be competent on the basis of appropriate education, training, skills and experience.

○ **Competence, training and awareness**

The organization shall

a) Determine the necessary competence for personnel performing work affecting conformity to product requirements,
b) Where applicable, provide training or take other actions to achieve the necessary competence,
c) Evaluate the effectiveness of the actions taken,
d) Ensure that its personnel are aware of the relevance and importance of their activities and how they contribute to the achievement of the quality objectives, and
e) Maintain appropriate records of education, training, skills and experience.

❖ **Infrastructure**

The organization shall determine, provide and maintain the infrastructure needed to achieve conformity to product requirements. Infrastructure includes, as applicable,

a) Buildings, workspace and associated utilities,
b) Process equipment (both hardware and software), and
c) Supporting services (such as transport, communication or information systems)

❖ **Work environment**

The organization shall determine and manage the work environment needed to achieve conformity to product requirements.

G. Product realizations

❖ **Planning of product realization**

The organization shall plan and develop the processes needed for product realization. Planning of product realization shall be consistent with the requirements of the other processes of the quality management system (see 4.1).

a) In planning product realization, the organization shall determine the following, as appropriate:
b) Quality objectives and requirements for the product;
c) The need to establish processes and documents, and to provide resources specific to the product;
d) Required verification, validation, monitoring, measurement, inspection and test activities specific to the product and the criteria for product acceptance;
e) Records needed to provide evidence that the realization processes and resulting product meet requirements.

The output of this planning shall be in a form suitable for the organization's method of operations.

❖ **Customer-related processes**

○ **Determination of requirements related to the product**

The organization shall determine

a) Requirements specified by the customer, including the requirements for delivery and post-delivery activities,
b) Requirements not stated by the customer but necessary for specified or intended use, where known,
c) Statutory and regulatory requirements applicable to the product, and
d) Any additional requirements considered necessary by the organization

○ **Review of requirements related to the product**

The organization shall review the requirements related to the product. This review shall be conducted prior to the organization's commitment to supply a product to the customer (e.g. submission of tenders, acceptance of contracts or orders, acceptance of changes to contracts or orders) and shall ensure that

a) Product requirements are defined,
b) Contract or order requirements differing from those previously expressed are resolved, and
c) The organization has the ability to meet the defined requirements.
d) Records of the results of the review and actions arising from the review shall be maintained.

Where the customer provides no documented statement of requirement, the customer requirements shall be confirmed by the organization before acceptance. Where product requirements are changed, the organization shall ensure that relevant documents are amended and that relevant personnel are made aware of the changed requirements.

○ **Customer communication**

The organization shall determine and implement effective arrangements for communicating with customers in relation to

a) Product information,
b) Enquiries, contracts or order handling, including amendments, and
c) Customer feedback, including customer complaints

❖ **Design and development**

○ **Design and development planning**

The organization shall plan and control the design and development of product.During the design and development planning, the organization shall determine

a) The design and development stages,
b) The review, verification and validation that are appropriate to each design and development stage, and
c) The responsibilities and authorities for design and development

The organization shall manage the interfaces between different groups involved in design and development to ensure effective communication and clear assignment of responsibility.Planning output shall be updated, as appropriate, as the design and development progresses.

○ **Design and development inputs**

Inputs relating to product requirements shall be determined and records maintained. These inputs shall include Functional and performance requirements,

a) Applicable statutory and regulatory requirements,
b) Where applicable, information derived from previous similar designs, and
c) Other requirements essential for design and development

The inputs shall be reviewed for adequacy. Requirements shall be complete, unambiguous and not in conflict with each other.

○ **Design and development outputs**

The outputs of design and development shall be in a form suitable for verification against the design and development input and shall be approved prior to release.

Design and development outputs shall

a) Meet the input requirements for design and development,
b) Provide appropriate information for purchasing, production and service provision,
c) Contain or reference product acceptance criteria, and
d) Specify the characteristics of the product that are essential for its safe and proper use.

○ **Design and development review**

At suitable stages, systematic reviews of design and development shall be performed in accordance with planned arrangements

a) To evaluate the ability of the results of design and development to meet requirements, and
b) To identify any problems and propose necessary actions

Participants in such reviews shall include representatives of functions concerned with the design and development stage(s) being reviewed. Records of the results of the reviews and any necessary actions shall be maintained.

○ **Design and development verification**

Verification shall be performed in accordance with planned arrangements to ensure that the design and development outputs have met the design and development input requirements. Records of the results of the verification and any necessary actions shall be maintained.

○ **Design and development validation**

Design and development validation shall be performed in accordance with planned arrangements to ensure that the resulting product is capable of meeting the requirements for the specified application or intended use, where known. Wherever practicable, validation shall be completed prior to the delivery or implementation of the product. Records of the results of validation and any necessary actions shall be maintained.

○ **Control of design and development changes**

Design and development changes shall be identified and records maintained. The changes shall be reviewed, verified and validated, as appropriate, and approved before implementation. The review of design and development changes shall include evaluation of the effect of the changes on constituent parts and product already delivered. Records of the results of the review of changes and any necessary actions shall be maintained.

❖ **Purchasing**

○ **Purchasing process**

The organization shall ensure that purchased product conforms to specified purchase requirements. The type and extent of control applied to the supplier and the purchased product shall be dependent upon the effect of the purchased product on subsequent product realization or the final product. The organization shall evaluate and select suppliers based on their ability to supply product in accordance with the organization's requirements. Criteria for selection, evaluation and re-evaluation shall be established. Records of the results of evaluations and any necessary actions arising from the evaluation shall be maintained.

- **Purchasing information**

Purchasing information shall describe the product to be purchased, including, where appropriate,

a) Requirements for approval of product, procedures, processes and equipment,
b) Requirements for qualification of personnel, and
c) Quality management system requirements.

The organization shall ensure the adequacy of specified purchase requirements prior to their communication to the supplier.

- **Verification of purchased product**

The organization shall establish and implement the inspection or other activities necessary for ensuring that purchased product meets specified purchase requirements. Where the organization or its customer intends to perform verification at the supplier's premises, the organization shall state the intended verification arrangements and method of product release in the purchasing information.

❖ **Production and service provision**

- **Control of production and service provision**

The organization shall plan and carry out production and service provision under controlled conditions.
Controlled conditions shall include, as applicable,

a) The availability of information that describes the characteristics of the product,
b) The availability of work instructions, as necessary,
c) The use of suitable equipment,
d) The availability and use of monitoring and measuring equipment,
e) The implementation of monitoring and measurement, and
f) The implementation of product release, delivery and post-delivery activities

- **7.5.2 Validation of processes for production and service provision**

The organization shall validate any processes for production and service provision where the resulting output cannot be verified by subsequent monitoring or measurement and, as a consequence, deficiencies become apparent only after the product is in use or the service has been delivered. Validation shall demonstrate the ability of these processes to achieve planned results. The organization shall establish arrangements for these processes including, as applicable,

a) Defined criteria for review and approval of the processes,
b) Approval of equipment and qualification of personnel,
c) Use of specific methods and procedures,
d) Requirements for records, and
e) Revalidation.

- **Identification and traceability**

Where appropriate, the organization shall identify the product by suitable means throughout product realization.
The organization shall identify the product status with respect to monitoring and measurement requirements throughout product realization.Where traceability is a requirement, the organization shall control the unique identification of the product and maintain records.

- **Customer property**

The organization shall exercise care with customer property while it is under the organization's control or being used by the organization. The organization shall identify, verify, protect and safeguard customer property provided for use or incorporation into the product. If any customer property is lost, damaged or otherwise found to be unsuitable for use, the organization shall report this to the customer and maintain records.

- **Preservation of product**

The organization shall preserve the product during internal processing and delivery to the intended destination in order to maintain conformity to requirements. As applicable, preservation shall include identification, handling, packaging, storage and protection. Preservation shall also apply to the constituent parts of a product.

❖ **Control of monitoring and measuring equipment**

The organization shall determine the monitoring and measurement to be undertaken and the monitoring and measuring equipment needed to provide evidence of conformity of product to determined requirements.The organization shall establish processes to ensure that monitoring and measurement can be carried out and are carried out in a manner that is consistent with the monitoring and measurement requirements.Where necessary to ensure valid results, measuring equipment shall

a) Be calibrated or verified, or both, at specified intervals, or prior to use, against measurement standards traceable to international or national measurement standards; where no such standards exist, the basis used for calibration or verification shall be recorded;
b) Be adjusted or re-adjusted as necessary;
c) Have identification in order to determine its calibration status;
d) Be safeguarded from adjustments that would invalidate the measurement result;

e) Be protected from damage and deterioration during handling, maintenance and storage.

In addition, the organization shall assess and record the validity of the previous measuring results when the equipment is found not to conform to requirements. The organization shall take appropriate action on the equipment and any product affected.Records of the results of calibration and verification shall be maintained.When used in the monitoring and measurement of specified requirements, the ability of computer software to satisfy the intended application shall be confirmed. This shall be undertaken prior to initial use and reconfirmed as necessary.

H. Measurement, analysis and improvement

❖ **General**

The organization shall plan and implement the monitoring, measurement, analysis and improvement processes needed

a) To demonstrate conformity to product requirements,
b) To ensure conformity of the quality management system, and
c) To continually improve the effectiveness of the quality management system.

This shall include determination of applicable methods, including statistical techniques, and the extent of their use.

❖ **Monitoring and measurement**

o **Customer satisfaction**

As one of the measurements of the performance of the quality management system, the organization shall monitor information relating to customer perception as to whether the organization has met customer requirements. The methods for obtaining and using this information shall be determined.

o **Internal audit**

The organization shall conduct internal audits at planned intervals to determine whether the quality management system

a) Conforms to the planned arrangements, to the requirements of this International Standard and to the quality management system requirements established by the organization, and
b) Is effectively implemented and maintained.

An audit program shall be planned, taking into consideration the status and importance of the processes and areas to be audited, as well as the results of previous audits. The audit criteria, scope, frequency and methods shall be defined. The selection of auditors and conduct of audits shall ensure objectivity and impartiality of the audit process. Auditors shall not audit their own work.A documented procedure shall be established to define the responsibilities and requirements for planning and conducting audits, establishing records and reporting results.Records of the audits and their results shall be maintained.The management responsible for the area being audited shall ensure that any necessary corrections and corrective actions are taken without undue delay to eliminate detected nonconformities and their causes.Follow-up activities shall include the verification of the actions taken and the reporting of verification results.

o **Monitoring and measurement of processes**

The organization shall apply suitable methods for monitoring and, where applicable, measurement of the quality management system processes. These methods shall demonstrate the ability of the processes to achieve planned results. When planned results are not achieved, correction and corrective action shall be taken, as appropriate.

o **Monitoring and measurement of product**

The organization shall monitor and measure the characteristics of the product to verify that product requirements have been met. This shall be carried out at appropriate stages of the product realization process in accordance with the planned arrangements. Evidence of conformity with the acceptance criteria shall be maintained.Records shall indicate the person(s) authorizing release of product for delivery to the customer.The release of product and delivery of service to the customer shall not proceed until the planned arrangements have been satisfactorily completed, unless otherwise approved by a relevant authority and, where applicable, by the customer.

❖ **Control of nonconforming product**

The organization shall ensure that product which does not conform to product requirements is identified and controlled to prevent its unintended use or delivery. A documented procedure shall be established to define the controls and related responsibilities and authorities for dealing with nonconforming product.

Where applicable, the organization shall deal with nonconforming product by one or more of the following ways:

a) By taking action to eliminate the detected nonconformity;
b) By authorizing its use, release or acceptance under concession by a relevant authority and, where applicable, by the customer;
c) By taking action to preclude its original intended use or application;
d) By taking action appropriate to the effects, or potential effects, of the nonconformity when nonconforming product is detected after delivery or use has started.

When nonconforming product is corrected it shall be subject to re-verification to demonstrate conformity to the

requirements.Records of the nature of nonconformities and any subsequent actions taken, including concessions obtained, shall be maintained.

❖ **Analysis of data**

The organization shall determine, collect and analyze appropriate data to demonstrate the suitability and effectiveness of the quality management system and to evaluate where continual improvement of the effectiveness of the quality management system can be made. This shall include data generated as a result of monitoring and measurement and from other relevant sources.

The analysis of data shall provide information relating to

a) Customer satisfaction
b) Conformity to product requirements
c) Characteristics and trends of processes and products, including opportunities for preventive action, and
d) Suppliers

❖ **Improvement**

○ **Continual improvement**

The organization shall continually improve the effectiveness of the quality management system through the use of the quality policy, quality objectives, audit results, analysis of data, corrective and preventive actions and management review.

○ **Corrective action**

The organization shall take action to eliminate the causes of nonconformities in order to prevent recurrence.Corrective actions shall be appropriate to the effects of the nonconformities encountered.A documented procedure shall be established to define requirements for

a) Reviewing nonconformities (including customer complaints),
b) Determining the causes of nonconformities,
c) Evaluating the need for action to ensure that nonconformities do not recur,
d) Determining and implementing action needed,
e) Records of the results of action taken (see 4.2.4), and
f) Reviewing the effectiveness of the corrective action taken.

○ **Preventive action**

The organization shall determine action to eliminate the causes of potential nonconformities in order to prevent their occurrence. Preventive actions shall be appropriate to the effects of the potential problems.A documented procedure shall be established to define requirements for

a) Determining potential nonconformities and their causes,
b) Evaluating the need for action to prevent occurrence of nonconformities,
c) Determining and implementing action needed,
d) Records of results of action taken (see 4.2.4), and
e) Reviewing the effectiveness of the preventive action taken.

3. Materials and Methodology

The main focus of this research study was implementing ISO 9001:2008 QMS to the SNSCIS. The first phase of the study involved understanding the requirements for implementing the ISO 9001: 2008 QMS to the SNSCIS. A pre-assessment was carried out to find gaps between existing states and required states using pre-assessment questionnaire published by Sri Lanka Standards Institution. Individual interviews were conducted to evaluate the perception of employees on implementing and maintaining the quality management system. Phase two of the study involved planning and developing standards to Sugathadasa National Sports Complex according to the ISO 9001:2008 QMS. After developing all the frame work and documents of ISO 9001:2008 QMS, a post-assessment was conducted to find gaps after using the same questionnaire that was used for pre gap analysis.

3.1. Gap analysis using pre-assessment questionnaire

The Pre-Assessment Questionnaire developed by the Sri Lanka Standards Institute (Doc. No.: QSC – F 11.0 – 02) was used to find the gaps between existing and required states for implementing the QMS. The questionnaire contained questions on the following areas:

- General information about the organization
- Requirements of the Quality Management System
- Management responsibility
- Resource management
- Product realization
- Measurement, analysis, and improvement

3.2. Individual Interviews

Several unstructured interviews were conducted with staff members of different levels before starting the process of preparing ISO 9000 documentation. In unstructured interviews, both parties know the purpose of the interview

and its setting encourages conversation through the establishment of a rapport. This method was effective and well-suited for this research as it allows gathering all the necessary information from employees.Interviews were conducted with personnel from top management as well as with other staff members of different divisions of the SNSCI before starting the development phase and during the development of procedures/documents required for the QMS.

3.3. Development of frame work and documents of ISO 9001:2008 QMS

Phase two of this research study involved development of all necessary frame work and documents that are required by the ISO 9001:2008 QMS. The process was carried out in several steps as described below.

3.3.1. Defining the Scope of QMS

The scope of QMS was determined based on the nature of the organization's service, the result of risk assessment, commercial considerations, and contractual, statutory and regulatory requirements. After determination of the scope, it was clearly defined in the SNSCI Quality Manual.

3.3.2. Identification of Process

Key processes and supportive processes at SNSCI were identified. This was conducted in two steps. Key processes were identified as the first step and in the second step supportive processes were identified. Each process had an "owner" who was responsible for the activities that relate to the success of the process.

3.3.3. Development of Quality Policy & Objectives

Quality policy & objectives were developed to determine conformity to (customer and regulatory) requirements, and facilitate the effective deployment and improvement of the QMS.

3.3.4. Defining Roles & Responsibilities

Roles and responsibilities of management system representative, organization's management, personnel performing work, and top management of every department of Sugathadasa National Sports Complex - Indoor Stadium were defined.

3.3.5. Development of QMS Documentation

The following documents were prepared;

- Quality Manual
- Documented Procedures
- Work Instructions
- Records & Forms
- Six 6 Mandatory Procedures
    I. Control of Documents (4.2.3)
    II. Control of Records (4.2.4)
    III. Internal Audit (8.2.2)
    IV. Control of Nonconforming Services (8.3)
    V. Corrective Action (8.5.2)
    VI. Preventive Action (8.5.3)

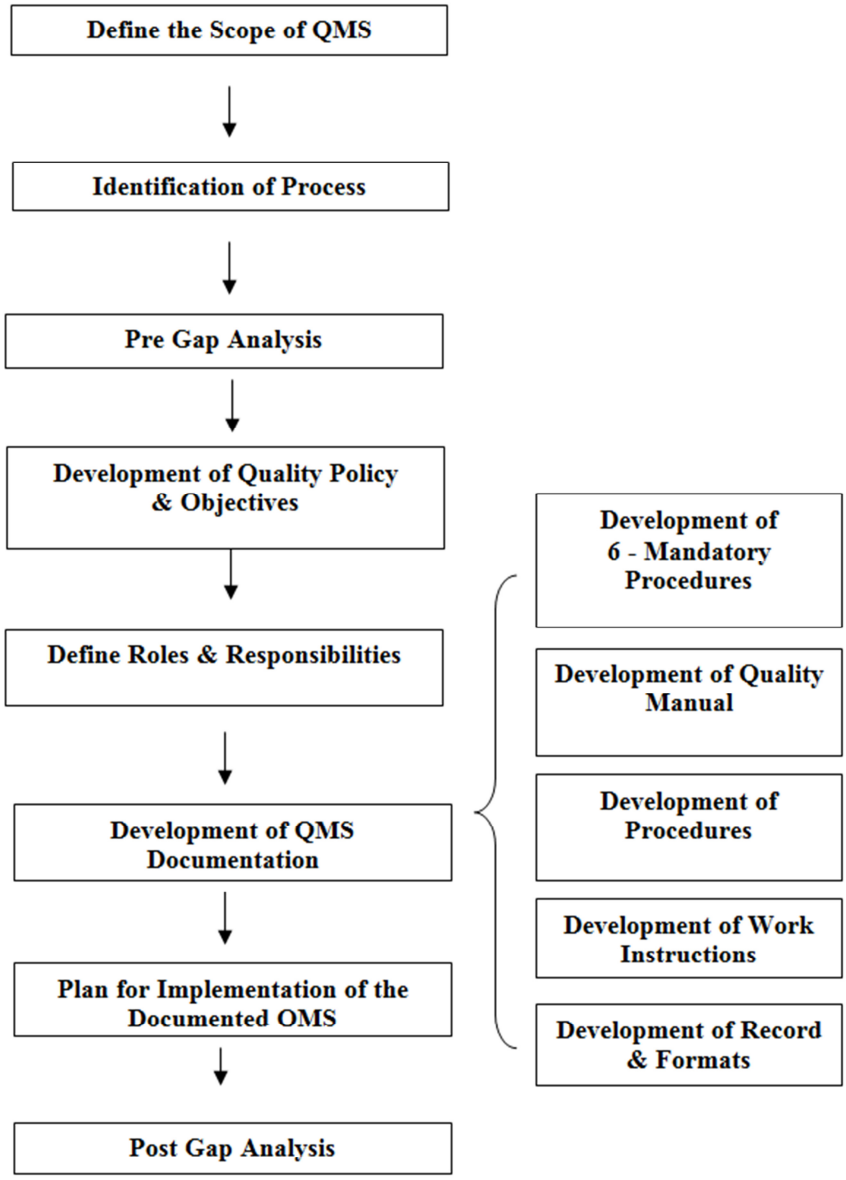
3.3.6. Plan for Implementation of the Documented QMS

All preliminary requirements were prepared to implementing Quality Management System (ISO 9001:2008) to the Sugathadasa National Sports Complex – Indoor Stadium.

3.4. Post Gap Analysis

Post assessment was conducted to find gaps after setting up of all preliminary requirements for implementing Quality Management System, using the same questionnaire that was used for pre gap analysis. The flow diagram of the step-wise procedure that was used throughout the study is given in Figure 3.1.

Figure 3.1 Flow diagrams for the development of ISO 9001:2008 QMS to Sugathadasa National Sports Complex indoor stadium



4. Results and Discussion

4.1. Findings from the pre-assessment questionnaire

The Pre-Assessment Questionnaire developed by the Sri Lanka Standards Institute (Doc. No.: QSC – F 11.0 – 02) was used to find the gaps between existing and required states for implementing the QMS.

The questionnaire contained questions on the following sections:

- General information of the company
- Requirements of the Quality Management System
- Management responsibility
- Resource management
- Product realization
- Measurement, analysis, and improvement

Since the SNSCI does not have a QMS implemented in their organization up to now, the answer for most of the questions asked in the questionnaire was "No". In the section of "General Requirements" of the Quality Management System, answer for the following two questions was "Yes".

4.2. Findings from Interviews

Information gathered from interview sessions were used to lay down the frame work for the implementation of ISO 9001:2008 QMS. In addition to this, interviews helped to get an idea on the perception of employees on implementing and maintaining the quality management system.According to interviewees, the management of

the SNSCI understands the importance of implementing the ISO 9001:2008 QMS to the SNSCI and is willing to provide necessary requirements to implement the QMS. The management has a clear idea on the benefits that the organization can achieve by implementing the ISO 9001:2008, so they were willing to provide all necessary information inside the organization to construct the frame work.

However, some staff members, especially the employees from the bottom layers, did not have a clear idea on the QMS, it's functioning, and benefits. This shows the importance of conducting training sessions for employees of all levels, bottom to top.In addition to this, information gathered from interviews (e.g., organizational structure, distribution of duties, roles of each division etc.) helped in compiling the Quality Manual and other mandatory documents including procedures and work instructions.

4.3. Findings from the Post-Assessment Questionnaire

The QMS and its related documents were developed considering the gaps identified using the pre-assessment questionnaire, in order to meet the requirements of ISO standards. Post assessment was then carried out to find gaps after setting up of all preliminary requirements for the implementation of ISO 9001:2008 QMS. The answer to questions in all six sections was "Yes". This shows that the developed QMS complies with all requirements of ISO 9001 certification.

5. Conclusion and Recommendation

5.1. Conclusions

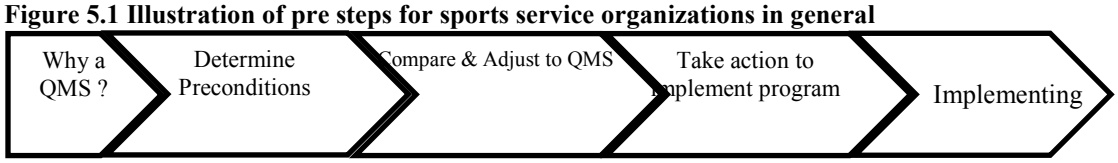
The aim of this study has been to determine how sports service organizations can prepare themselves to implement a quality management system like other organizations. I have used a case Sports service organization to determine how an organization should prepare for the implementation.The conclusion that i have drawn is that sports service organization should identify what are the requirements for establish QMS and according to the requirements how fulfill those requirements.

This study covers only the document compilation stage of the implementation of a QMS and consequently a study in the same case organization should be made to determine how the implementation of the QMS turned out and whether this study provided sufficient preparation for the case organization. If such a study can be made it might give a more conclusive picture of what is needed to avoid or overcome the barriers inherent with a QMS implementation.

5.2. Recommendations

The general recommendations for any sports service organizations considering implementing a QMS are based upon the research project that I have performed, more specifically on how I have conducted my research on the case sports service organization. These recommendations are given with the assumption that the adopting organization is considering or is about to implement ISO 9001.

Figure 5.1 Illustration of pre steps for sports service organizations in general



The main recommendation that I can give to sports service organizations considering implementing a QMS is to make a pre-assessment of their organization. This pre-assessment should determine the capabilities, strength and weaknesses of the organization through internal scrutiny. The pre-assessment should be performed in accordance to the Pre assessment questionnaire given by SLSI. First and foremost the organization needs to consider why the QMS should be implemented. This step is vital as the QMS must be implemented for the right reasons. The sports service organization needs to stipulate the reasons for implementing a QMS along with the intended and desired benefits. It is important to, at this first stage, activate and engage the complete management team and obtain their valuable views and opinions and decide on the purpose, vision and what the desired results are. A simple cost vs. benefit analysis can be made where these are compared to determine whether or not a QMS is worth pursuing. The sports service organization should examine different possible systems and/or programs that are in line with their purpose and vision of the change initiative. When the organization has established that a specific type of QMS is worth pursuing, the next step can be taken.

Other recommendations that can be given are;

- Research to identify the critical issues of QMS Implementation in sports service organizations
- Research in methods and techniques on how to overcome the barriers affecting ISO 9001:2008 standards in all Sports service organizations.
- Determination of critical success factors of ISO 9001:2008 standards Implementation in Sports service organization.
- Continuous post-implementation evaluation mechanisms to ensure the successful operation of QMS.
- This type of research project can be recommended for Ministry of sports, other institute of Sports Ministry (NISS, Department of Sports development, Institute of Sports medicine, federations,

Associations), sports clubs , university sports centers inclusive all Private and public sports organizations.

References

ACS Registrar Ltd 2010, Benefits of ISO 9001, International Organization for Standardization, Geneva, viewed 20 February 2014, http://www.iso9001.com/benefitsofiso9001.asp

Al-Zamany Y., Hoddell E. and Savage B., (2002), Understanding the difficulties of implementing quality management in Yemen, The TQM Magazine, Vol.14, No.4, Pp.240-247.

Askey J. and Malcolm A., (1997), "Quality management in the UK advertising industry", International Journal of Quality & Reliability Management, Vol.14, No.2, Pp.186-196.

Balzarova M., Bamber C. and McCambridge S., (2002), "The factors affecting successful implementation of Process-Based Management in a UK Housing Association Enterprise", 2nd International Conference on Systems Thinking in Management, School of Management, Salford University.

Beckford, J. 1998. Quality – A critical introduction. Rutledge, London.

Beskese A. and Cebeci U., (2001), "Total Quality Management and ISO 9000 application in Turkey", The TQM Magazine, Vol. 13, No.1, Pp. 69-73.

Biazzo, S., &Bernardi, G. (2003). Process management practices and quality systems standards: Risks and opportunities of the ISO 9001 certification. Business Process Management Journal , 9 (2), 149-169.

Brown, M.G. 1993. "Why does total quality fail in two out of three countries?", Journal of Quality and Participation, 16:2, 80-92.

BS EN ISO 9001 (2000), Quality Management Systems. London: British Standards Institution.

Brunsson, N. &Jacobsson, B. (2000).A World of Standards, New York, Oxford University Press Inc.

Carlsson, M. &Carlsson, D. (1994). Experiences of implementing ISO 9000 in Swedish Industry, International Journal of Quality & Reliability Management, Vol. 13 No. 7, 1996, pp. 36-47, MCB University Press

Casadesus M. and Karapetrovic S., (2003), "ISO 9001:2000 and ISO 9001/2/3:1994-A comparative empirical study of the benefits and costs", Business Excellence-Canada, Pp.293-298.

Casadesús, M. & de Castro, R. (2005). How improving quality improves supply chain management: empirical study, Total Quality Magazine, Vol. 17, No. 4, 2005, pp. 345-357.

Certification Europe 2012, Benefits of ISO 9001, International Organization for Standardization, London, viewed 18 February 2014, <http://certificationeurope.com/benefits-of-iso-9001>

Crosby, P.B. 1979. Quality is free. The art of making quality certain. New American Library, New York

Crosby P., (1996), "Quality is Still Free: Making Quality Certain in Uncertain Times", McGraw-Hill, New York, USA.

Dale, B. G., van der Wiele, T., van Iwaarden, J. (2007). Managing Quality, 5th edition, Oxford, Blackwell Publishing Ltd

Dale, B.G., Wu, P.Y, Zairi, M., Williams, A.R.T., & van der Wiele, T. 2001b. "Total quality management and theory: An exploratory study of contribution", Total Quality Management, 12:4, 439-449.

Deming W., (1986), "Out of the Crises", Cambridge; Cambridge University Press.

Erdal E. and Ghosh J., (1997), "ISO 9000 Implementation in Turkish Industry", International Journal of Operations and Production Management, Vol.17, No.12, Pp.1233-1246.

Feigenbaum, A. V. (1983). Total Quality Control, 3rd edition, McGraw-Hill

Feigenbaum, A. V. &Feigenbaum, D. S. (1999). New Quality for the 21st Century: Developments are the Fundamental Drivers of Business, Quality progress, December, pp. 27-31.

Goetsch D. and Davis S., (2000), "Quality Management: Introduction to Total Quality Management for Production, Processing and Services", 3 rd edition, Prentice Hall, New Jersey, USA.

Gutiérrez, L. J., Tamayo Torres, I. &Barrales Molina, V. (2010) Quality management initiatives in Europe: An empirical analysis according to their structural elements, Total Quality Management, Vol. 21, No. 6, pp. 577-601

Hallström Tamm, K. (2000). Kampenförauktoritet – standard is erring organization iarbete, AkademiskAvhandling, Ekonomiska For skningsinstitutetHandelshögskolan Stockholm, ElandersGotab Stockholm.

Hele J., (2003), "Two Years on: Is ISO 9001 alive and kicking?", ISO Management Systems, Published by ISO, March-April 2003, Pp.36-40.

Howat, G., Absher, J. Crilley, G., & Milne, L. (1996). Measuring customer service quality in sports and leisure centres. Managing Leisure, 1(2), 77-89.

Hoyle D., (2001), "ISO 9000: Quality system handbook", 4 th edition, Butterworth- Heinemann, Oxford, UK.

International Journal of Sport Management Volume 10, 2009, 1

International Organization for Standards (ISO), (2014).About ISO. Webpage: <www.iso.org/iso/about.htm> [Retrieved: 5th April]

International Organization for Standardization 2014,About ISO, International Organization for Standardization, Geneva, viewed 18 February 2014, http://www.iso.org/iso/home/about.htm
International Organization for Standardization 2014,Benefits of Standards,International Organization for Standardization, Geneva, viewed 18 February 2014, http://www.iso.org/iso/home/standards/benefitsofstandards.htm
ISO 9000 standard, (2000), "Quality management systems-Fundamentals and vocabulary", International Organization for Standardization, Geneva, Switzerland.
ISO 9001 standard, (1994), "Quality systems-Model for quality assurance in design, production, installation and servicing", International Organisation for Standardization, Geneva, Switzerland.
ISO/TC 176/SC 2, (2002), Secretariat of ISO/TC 176/SC 2, "Feedback on ISO 9001:2000: Worldwide round-up of early market reaction", Management Systems, Vol.2, No.1, January-February 2002, Pp.19-29.
ISO/TC 176 (1998), Secretariat of ISO/TC 176/SC 2, "Introduction to the revision of the ISO 9000 standards", International Organization for Standardization Geneva, Switzerland.
ISO/TC 176/SC 2, (2002), Secretariat of ISO/TC 176/SC 2, "Feedback on ISO 9001:2000: Worldwide round-up of early market reaction", Management Systems, Vol.2, No.1, January-February 2002, Pp.19-29.
Kelley, S.W., & Turley, L.W. (2001).Consumer perceptions of service quality attributes at sporting events. Journal of Business Research, 54(2),161-166.
Kohlbacher, Florian (2005). The Use of Qualitative Content Analysis in Case Study Research [89 paragraphs]. Forum Qualitative Sozialforschung / Forum: Qualitative Social Research, 7(1), Art. 21, http://nbn-resolving.de/urn:nbn:de:0114-fqs0601211.
Koo H., Koo L. and Fredrick T, (1998), "Analysing employee attitudes towards ISO 9000 certification", Managing Service Quality, Vol.8, No.5, Pp.312-319.
Oakland J., (1989), "Total Quality Management", 2nd edition, Oxford, Butterworth- Heinemann Ltd, UK.
Laszlo G., (2000), "ISO 9000-2000 version: implications for applicants and examiners", The TQM Magazine, Vol.12, No.5, Pp.336-339.
Liang-Tan P., (1997), "An evaluation of TQM and the techniques for successful implementation", Training for Quality, Vol.5, No.4, Pp.150-159.
Low S. and Ling-Pan H., (2004), "Critical Linkage Factors between Management and Supervisors Staff for ISO 9001: 2000 Quality Management Systems in Construction", 9th International Conference on ISO 9000 & TQM, 5-7 April 2004 at the Siam-CityHotel, Bangkok, Thailand.
Ludwig-Becker M., (1999), "Quality management principles as top team performance practices ISO 9000 criteria-reinterpreted", Team Performance Management, Vol.5, No.7, Pp.207-211.
Madu, C.N. &Kuei, C. (1995), Strategic Total Quality Management: Corporate Performance and Productivity. Westport: Quorum Books
Martinez-Costa M. and Martinez-Lorente A., (2003), "ISO 9000: The past, the present and the future. A case study in the Spanish Industry", Proceedings of 8th International Conference on ISO 9000 and TQM, Ho, S. (Ed), Pp. 61-67, Montreal, Canada, April 2003.
McTeer, M. M. and Dale, B. G., (1995), How to achieve ISO 9000 series registration: A model for small companies, Quality Management Journal, 43-55.
Module 6 /Sec 02/Diploma in Quality Management/Sri Lanka Standard Institution
Motwani J., Kumar A. and Chang C., (1996), "A roadmap to implementing ISO 9000", International Journal of Quality & Reliability Management, Vol.13, No.1, Pp.72-83.
Oakland J S, Total Quality Management – The route to improving performance p. 22
Papadimitriou, D.A., &Karteliotis, K. (2000). The service quality expectations in private sport and fitness centers: A re-examination of the factor structure. Sport Marketing Quarterly, 9(3), 157-164.
Poksinska B., Dahlgoard J. and Antoni M., (2002), "The state of ISO 9000 certification: a study of Swedish organizations", The TQM Magazine, Vol.14, No.5, Pp.297-306.
Quazi H., Hong C. and Meng T. (2002), "impact of ISO 9000 certification on quality management practices: A comparative study", The TQM Magazine, Vol.13, No.1,Pp.53-57.
Ranghunathan T., Rao S. and Solis L., (1997), "A comparative study of quality practices: USA, China and India", Industrial management & Data systems, Vol.97, No.5, Pp.192-200.
Robinson, L. (2003). Committed to quality: the use of quality schemes in UK public leisure services.Managing Service Quality, 13(3), 247-255.
Robinson, L. (2006). Customers' expectations of sport organizations.EuropeanSport Management Quarterly, 6(1), 67-84.
Sivesan, S., &Achchuthan, S. (2013). Customer Perception towards Relationship Marketing and Personal Demographic Variables: A study of Jaffna District, Srilanka. Management and Administrative Sciences Review, 2(1), 67-78.
Robinson, L. (2007). The challenge of managing customer expectations of sport services: A theoretical model.

Proceedings of the 15th European Association of Sport Management, Torino,Italy, 161-163.
Rothery B., (1993), "ISO 9000", Gower Press, Hampshire, UK.
Sauvage T. and Aptel 0., (2004), "Segmentation of the Impact of the Quality Certification Process on Logistics Performance", 9th International Conference on ISO 9000 & TQM, 5-7 April 2004 at the Siam-City Hotel, Bangkok, Thailand.
SGS Pvt. Ltd. 2014, Certified Client Directories, SGS Pvt. Ltd, Geneva, viewed on 23 February 2014, http://www.sgs.com/en/Our-Company/Certified-Client-Directories/Certified-Client-Directories.aspx
Shriharan, S., &Samarasinghe, S. (2014). Pre competition Anxiety level among junior Rugby football Team Players: Sri Lankan Perspective. Developing Country Studies, 4(12), 199-208.
Shriharan, S., &Samarasinghe, S. (2014). The Impact of Physical Fitness on Academic Performance of Grade Five School Children: Case Study. Journal of Education and Practice, 5(19), 134-149.
Smithers Quality Assessments 2014, Benefits of ISO 9001 Certification, International Organization for Standardization, Ohio, viewed 18 February 2014, <http://www.smithersregistrar.com/iso9001/page-benefits-of-iso9001.shtml>
Sri Lanka standard, SLS ISO 9001:2008, UDC 658.56
Tang S. and Kam C., (1999), "A survey of ISO 9001 implementation in engineering consultancies in Hong Kong", International Journal of Quality & Reliability Management, Vol.16, No.6, Pp.562-574.
Theodorakis, N., &Kambitsis, C. (1998).The effect of sevice quality n sport consumers' behavioral intentions.Proceedings of the 6th Congress of the European Association of Sport Management. Madeira, Spain.
Thuseethan, S. (2014). Department Management System For Departments Of Sri Lankan Universities. International Journal Of Scientific & Technology Research,3(6), 173-175.
Thuseethan, S., &Kuhanesan, S. (2014).Effective Use of Human Computer Interaction in Digital Academic Supportive Devices. International Journal of Science and Research, 3(6), 388-392.
Thuseethan, S., &Kuhanesan, S. (2014).Eigenface Based Recognition of Emotion Variant Faces . Computer Engineering and Intelligent Systems, 5(7).
Tricker R., (1997), "ISO 9000 for small Businesses: A guide to cost effective compliance", Butterworth-Heinemann, Oxford, UK.
Tsim Y., Yeung V. and Leung E., (2002), "An adaptation to ISO 9001:2000 for certified organizations", Managerial Auditing Journal, Vol.17, No.5, Pp.245-250.
Tsitskari, E., Tsiotras, D., &Tsiotras, D. (2006).Measuring service quality in sport services. Total Quality Management, 17(5), 623-631.
van der Wiele, T., van Iwaarden, J., Williams, R., Dale, B. G. (2005). Perceptions about the ISO 9000 (2000) quality system standard revision and its value: the Dutch experience, International Journal of Quality and Reliability Management, Vol. 22, No. 2, pp. 101-119.
Vouzas F. and Gotzamani K., (2004), "Best Practices of Selected Greek Organizations on Their Road to Business Excellence: The Contribution of the New ISO 9000:2000
Ushantha, R. C., Wijeratne, A. W., &Achchuthan, S. (2014). An Assessment of Retail Service Quality: An Empirical Study of the RSQS in Sri Lankan Supermarkets. Developing Country Studies, 4(3), 78-90.
W.E.Deming (1986), out of the crisis (Cambridge MA: Massachusetts institute of technology center for Advanced Engineering studies.)
Wiele A., Williams A., Brown A. and Dale B., (2001), "The ISO 9000 series as a tool for organizational change: Is there a case", Business Process Management Journal, Vol.7, No.4, Pp.323-331.
Wilkinson, G. & Dale, B. G. (2002). An examination of the ISO 9001:2000 standard and its influence on the integration of management systems, Production Planning & Control, Vol. 13, No. 3, pp 284-297.
Withers, B.E. &Ebrahimpour, M. (2001). Impacts of ISO 9000 registration on European firms : a case analysis. Integrated Manufacturing Systems, 12 (2), 139 – 151.
Yin R., (2003), "Case Study Research: Design and Methods", 3 rd edition, Sage Publications, London, UK.
Zeithaml, V.A. (1987). Defining and relating price, perceived quality and perceivedvalue. Report, No 87-101. MarketingScience Institute, Cambridge,M.A.

The IISTE is a pioneer in the Open-Access hosting service and academic event management. The aim of the firm is Accelerating Global Knowledge Sharing.

More information about the firm can be found on the homepage:
http://www.iiste.org

CALL FOR JOURNAL PAPERS

There are more than 30 peer-reviewed academic journals hosted under the hosting platform.

Prospective authors of journals can find the submission instruction on the following page: http://www.iiste.org/journals/ All the journals articles are available online to the readers all over the world without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. Paper version of the journals is also available upon request of readers and authors.

MORE RESOURCES

Book publication information: http://www.iiste.org/book/

IISTE Knowledge Sharing Partners

EBSCO, Index Copernicus, Ulrich's Periodicals Directory, JournalTOCS, PKP Open Archives Harvester, Bielefeld Academic Search Engine, Elektronische Zeitschriftenbibliothek EZB, Open J-Gate, OCLC WorldCat, Universe Digtial Library , NewJour, Google Scholar